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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRAN, DALENA

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/683,779

Applicant(s)

RAO ET AL.

Examiner

Dalena Tran

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

**Notice to Applicant(s)**

1. This application has been examined. Claims 1-18 are pending.
2. The prior art submitted on 2/15/02 has been considered, the prior art submitted on 2/13/02 is the copy of prior art submitted on 2/15/02.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,4, and 6, are rejected under 35 U.S.C.103(a) as being unpatentable over Kosiak (5,835,007) in view of Breed (6,209,909).

As per claim 1, Kosiak discloses a pre-crash sensing system for an automotive vehicle coupled to a coupled to a countermeasure system having at least a first countermeasure and a second countermeasure comprising: a radar or lidar unit generating an object distance signal and object relative velocity signal (see column 2, lines 18-54; and column 3, lines 10-35). Kosiak does not discloses a vision system generating an object size. However, Breed discloses a vision system generating an object size signal and a controller coupled to radar unit and vision unit for activating either first countermeasure or the first and the second countermeasure in response to object distance, relative velocity and object size signals (see columns 7-11, lines 35-12; and columns 11-14, lines 44-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak by combining a vision system

Art Unit: 3661

generating an object size signal and a controller coupled to radar unit and vision unit for activating either first countermeasure or the first and the second countermeasure in response to object distance, relative velocity and object size signals to give substantially more information about the crash and the impacting object in order to accurate a sufficient deploy of the airbag.

As per claim 4, Kosiak discloses a vehicle speed sensor generating a speed signal corresponding to the longitudinal speed of the vehicle, wherein controller activates countermeasures in response to the longitudinal speed signal (see columns 3-5, lines 38-24).

As per claim 6, Kosiak discloses a pre-crash sensing system for an automotive vehicle coupled to a coupled to a countermeasure system having at least a first countermeasure and a second countermeasure comprising: a first sensor for generating an object distance signal and relative velocity signal for an object present in a predefined decision zone (see column 3, lines 10-36). Kosiak does not discloses a sensor generating an object size. However, Breed discloses a vision system generating an object size signal and a controller coupled to first and second sensor for activating either first countermeasure or the first and the second countermeasure in response to object distance, relative velocity and object size signals (see columns 7-11, lines 35-12; and columns 11-14, lines 44-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak by combining a first and second sensor generating an object size signal and a controller coupled to radar unit and vision unit for activating either first countermeasure or the first and the second countermeasure in response to object distance, relative velocity and object size signals to give substantially more information about the crash and the impacting object in order to accurate a sufficient deploy of the airbag.

Art Unit: 3661

5. Claims 2-3, and 7-8, are rejected under 35 U.S.C.103(a) as being unpatentable over Kosiak (5,835,007), and Breed (6,209,909) as applied to claims 1 and 6 above, and further in view of Byon (5,646,612).

As per claims 2-3, and 7-8, Kosiak, and Breed do not disclose object height and object area. However, Byon discloses object size comprises height and object area (see column 4, lines 44-64; columns 5-6, lines 14-48; and columns 8-10, lines 62-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, and Breed by combining object size comprises height and object area to determine a kind of object and the crash sensing system is suitably activate the countermeasures based on conditions.

6. Claims 5,9-10,15, and 18, are rejected under 35 U.S.C.103(a) as being unpatentable over Kosiak (5,835,007), and Breed (6,209,909) as applied to claims 1 and 6 above, and further in view of Shaw et al. (5,314,037).

As per claim 5, Kosiak, and Breed do not disclose a decision zone. However, Shaw et al. disclose radar or lidar sensor generates an object distance and relative velocity signals from an object within decision zone and vision sensor confirms the presence of the object within decision zone (see column 3, lines 3-66; and columns 11-12, lines 3-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, and Breed by combining radar or lidar sensor generates an object distance and relative velocity signals from an object within decision zone and vision sensor confirms the presence of the object within decision zone for accurately distinguishing an object ahead of vehicle whether it in a danger situation or not for making a decision whether to deploy the airbag system.

As per claim 9, Kosiak, and Breed do not disclose object orientation. However, Shaw et al. disclose determines an object orientation in response to object distance, size and height (see the abstract; and columns 13-15, lines 40-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, and Breed by combining determines an object orientation in response to object distance, size and height to detect the movement direction of obstacle.

Claim 10 is method claim corresponding to system claims 1 and 5 above. Therefore, it is rejected for the same rationales set forth as above.

As per claim 15, Kosiak, and Breed do not disclose a decision zone. However, Shaw et al. disclose detecting an object within the decision zone comprises detecting the object within the decision zone with a radar or lidar sensor system and confirming the presence with a vision system (see columns 6-8, lines 43-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, and Breed by combining radar or lidar sensor generates an object distance and relative velocity signals from an object within decision zone and vision sensor confirms the presence of the object within decision zone for accurately distinguishing an object ahead of vehicle whether it in a danger situation or not for making a decision whether to deploy the airbag system.

Claim 18 is method claim corresponding to system claim 5 above. Therefore, it is rejected for the same rationales set forth as above.

7. Claims 11-14, 17, and 19-20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosiak (5,835,007), Breed (6,209,909), and Shaw et al. (5,314,037) as applied to claims 10 and 18 above, and further in view of Farmer et al. (6,085,151).

As per claims 11, and 13, Kosiak, Breed, and Shaw et al. do not disclose activating the countermeasure in response to object height. However, Farmer et al. disclose activating the countermeasure system in response to object size comprises activating the countermeasure system in response to object height (see columns 11-13, lines 20-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, Breed, and Shaw et al. by combining activating the countermeasure system in response to object size comprises activating the countermeasure system in response to object height for accurately activate the automatic restraint system depend on each occupants.

As per claim 12, Kosiak, Breed, and Shaw et al. do not disclose object cross sectional area. However, Farmer et al. disclose activating the countermeasure system in response to object size comprises activating the countermeasure system in response to object cross sectional area (see columns 4-5, lines 11-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, Breed, and Shaw et al. by combining activating the countermeasure system in response to object size comprises activating the countermeasure system in response to object cross sectional area to detect the shape of the object and provide suitably deployment of the airbag to protect any injuries for the occupants.

Also, as per claim 14, Farmer et al. disclose determining the object cross sectional area with a vision system (see columns 6-7, lines 37-49).

As per claim 17, Kosiak, Breed, and Shaw et al. do not disclose activating the countermeasure system in response to the object size and vehicle orientation. However, Farmer et al. disclose activating the countermeasure system in response to object size comprises activating the countermeasure system in response to the object size and vehicle orientation (see

Art Unit: 3661

the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, Breed, and Shaw et al. by combining activating the countermeasure system in response to the object size and vehicle orientation to reduce the risk or harm to occupants by the airbag inflator while simultaneously reducing the restraint capacity of the airbag inflator, which places occupants at greater risk for injury when exposed to higher severity crashes.

As per claim 19, Farmer et al. disclose activating the countermeasure system in response to detecting an object within the decision zone (see columns 13-14, lines 20-4).

As per claim 20, Kosiak, Breed, and Shaw et al. do not disclose different type of countermeasure. However, Farmer et al. disclose activating a first countermeasure comprising pre-arming airbags and pretensioning motorized belt pretensioners, or activating first and second countermeasure comprising adjusting the host vehicle suspension height in response to object size and orientation (see column 6, lines 13-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Kosiak, Breed, and Shaw et al. by combining activating a first countermeasure comprising pre-arming airbags and pretensioning motorized belt pretensioners, or activating first and second countermeasure comprising adjusting the host vehicle suspension height in response to object size and orientation to provide sufficient and properly restraint for normally positioned occupants.

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

. Yoshida (5,285,188)



Art Unit: 3661

. Gentry et al. (5,330,226)

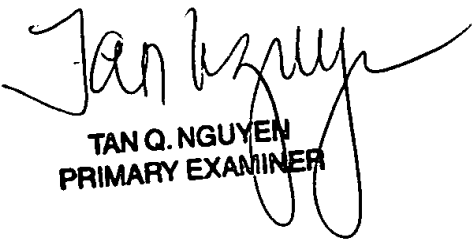
. Miller, III (5,667,246)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on 703-308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

/dt  
April 3, 2003

  
TAN Q. NGUYEN  
PRIMARY EXAMINER